

#2

OIPE

RAW SEQUENCE LISTING

DATE: 08/07/2001

PATENT APPLICATION: US/09/813,398

TIME: 08:09:22

Input Set : D:\seqlist.txt

Output Set: N:\CRF3\08072001\I813398.raw

ENTERED

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4 <110> APPLICANT: Bruce D. Weintraub
5      Mariusz W. Szkudlinski
6      University of Maryland
8 <120> TITLE OF INVENTION: CYSTINE KNOT GROWTH FACTOR MUTANTS
11 <130> FILE REFERENCE: UOFMD.003C1
C--> 13 <140> CURRENT APPLICATION NUMBER: US/09/813,398
C--> 13 <141> CURRENT FILING DATE: 2001-03-20
13 <150> PRIOR APPLICATION NUMBER: PCT/US99/05908
14 <151> PRIOR FILING DATE: 1999-03-19
16 <150> PRIOR APPLICATION NUMBER: PCT/US98/19772
17 <151> PRIOR FILING DATE: 1998-09-22
19 <160> NUMBER OF SEQ ID NOS: 41
21 <170> SOFTWARE: FastSEQ for Windows Version 4.0
23 <210> SEQ ID NO: 1
24 <211> LENGTH: 93
25 <212> TYPE: PRT
26 <213> ORGANISM: HOMO SAPIEN
28 <400> SEQUENCE: 1
29 Pro Ala Pro Asp Val Gln Asp Cys Pro Glu Cys Thr Leu Gln Glu Asn
30 1          5          10          15
31 Pro Phe Phe Ser Gln Pro Gly Ala Pro Ile Leu Gln Cys Met Gly Cys
32          20          25          30
33 Cys Phe Ser Arg Ala Tyr Pro Thr Pro Leu Arg Ser Lys Lys Thr Met
34          35          40          45
35 Leu Val Gln Lys Asn Val Thr Ser Glu Ser Thr Cys Cys Val Ala Lys
36          50          55          60
37 Ser Tyr Asn Arg Val Thr Val Met Gly Gly Phe Lys Val Glu Asn His
38 65          70          75          80
39 Thr Ala Cys His Cys Ser Thr Cys Tyr Tyr His Lys Ser
40          85          90
43 <210> SEQ ID NO: 2
44 <211> LENGTH: 119
45 <212> TYPE: PRT
46 <213> ORGANISM: HOMO SAPIEN
48 <400> SEQUENCE: 2
49 Pro Phe Cys Ile Pro Thr Glu Tyr Thr Met His Ile Glu Arg Arg Glu
50 1          5          10          15
51 Cys Ala Tyr Cys Leu Thr Ile Asn Thr Thr Ile Cys Ala Gly Tyr Cys
52          20          25          30
53 Met Thr Arg Asp Ile Asn Gly Lys Leu Phe Leu Pro Lys Tyr Ala Leu
54          35          40          45
55 Ser Gln Asp Val Cys Thr Tyr Arg Asp Phe Ile Tyr Arg Thr Val Glu
56          50          55          60
57 Ile Pro Gly Cys Pro Leu His Val Ala Pro Tyr Phe Ser Tyr Pro Val
58 65          70          75          80
59 Ala Leu Ser Cys Lys Cys Gly Lys Cys Asn Thr Asp Tyr Ser Asp Cys
60          85          90          95

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61 Ile His Glu Ala Ile Lys Thr Asn Tyr Cys Thr Lys Pro Gln Lys Ser
62          100          105          110
63 Tyr Leu Val Gly Phe Ser Val
64          115
67 <210> SEQ ID NO: 3
68 <211> LENGTH: 141
69 <212> TYPE: PRT
70 <213> ORGANISM: HOMO SAPIEN
72 <400> SEQUENCE: 3
73 Pro Ser Lys Glu Pro Leu Arg Pro Arg Cys Arg Pro Ile Asn Ala Thr
74 1          5          10          15
75 Leu Ala Val Glu Lys Glu Gly Cys Pro Val Cys Ile Thr Val Asn Thr
76          20          25          30
77 Thr Ile Cys Ala Gly Tyr Cys Pro Thr Met Thr Arg Val Leu Gln Gly
78          35          40          45
79 Val Leu Pro Ala Leu Pro Gln Val Val Cys Asn Tyr Arg Asp Val Arg
80          50          55          60
81 Phe Glu Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val Asn Pro Val
82 65          70          75          80
83 Val Ser Tyr Ala Val Ala Leu Ser Cys Gln Cys Ala Leu Cys Arg Arg
84          85          90          95
85 Ser Thr Thr Asp Cys Gly Gly Pro Lys Asp His Pro Leu Thr Cys Asp
86          100          105          110
87 Asp Pro Arg Phe Gln Asp Ser Ser Ser Ser Lys Ala Pro Pro Pro Ser
88          115          120          125
89 Leu Pro Ser Pro Ser Arg Leu Pro Gly Pro Ser Asp Thr
90          130          135          140
93 <210> SEQ ID NO: 4
94 <211> LENGTH: 122
95 <212> TYPE: PRT
96 <213> ORGANISM: HOMO SAPIEN
98 <400> SEQUENCE: 4
99 Pro Ser Arg Glu Pro Leu Arg Pro Trp Cys His Pro Ile Asn Ala Ile
100 1          5          10          15
101 Leu Ala Val Glu Lys Glu Gly Cys Pro Val Cys Ile Thr Val Asn Thr
102          20          25          30
103 Thr Ile Cys Ala Gly Tyr Cys Pro Thr Met Met Arg Val Leu Gln Ala
104          35          40          45
105 Val Leu Pro Pro Leu Pro Gln Val Val Cys Thr Tyr Arg Asp Val Arg
106          50          55          60
107 Phe Glu Ser Ile Arg Leu Pro Gly Cys Pro Arg Gly Val Asp Pro Val
108 65          70          75          80
109 Val Ser Phe Pro Val Ala Leu Ser Cys Arg Cys Gly Pro Cys Arg Arg
110          85          90          95
111 Ser Thr Ser Asp Cys Gly Gly Pro Lys Asp His Pro Leu Thr Cys Asp
112          100          105          110
113 His Pro Gln Leu Ser Gly Leu Leu Phe Leu
114          115          120
117 <210> SEQ ID NO: 5

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118 <211> LENGTH: 110
119 <212> TYPE: PRT
120 <213> ORGANISM: HOMO SAPIEN
122 <400> SEQUENCE: 5
123 Pro Asn Ser Cys Glu Leu Thr Asn Ile Thr Ile Ala Ile Glu Lys Glu
124 1 5 10 15
125 Glu Cys Arg Phe Cys Ile Ser Ile Asn Thr Thr Trp Cys Ala Gly Tyr
126 20 25 30
127 Cys Tyr Thr Arg Asp Leu Val Tyr Lys Asp Pro Ala Arg Pro Lys Ile
128 35 40 45
129 Thr Cys Thr Phe Lys Glu Leu Val Tyr Glu Thr Val Arg Val Pro Gly
130 50 55 60
131 Cys Ala His His Ala Asp Ser Leu Tyr Thr Tyr Pro Val Ala Thr Gln
132 65 70 75 80
133 Cys His Cys Gly Lys Cys Asp Ser Asp Ser Thr Asp Cys Thr Val Arg
134 85 90 95
135 Gly Leu Gly Pro Ser Tyr Cys Ser Phe Gly Glu Met Lys Glu
136 100 105 110
139 <210> SEQ ID NO: 6
140 <211> LENGTH: 126
141 <212> TYPE: PRT
142 <213> ORGANISM: HOMO SAPIEN
144 <400> SEQUENCE: 6
145 Pro Ser Ile Glu Glu Ala Val Pro Ala Val Cys Lys Thr Arg Thr Val
146 1 5 10 15
147 Ile Tyr Glu Ile Pro Arg Ser Gln Val Asp Pro Thr Ser Ala Asn Phe
148 20 25 30
149 Leu Ile Trp Pro Pro Cys Val Glu Val Lys Arg Cys Thr Gly Cys Cys
150 35 40 45
151 Asn Thr Ser Ser Val Lys Cys Gln Pro Ser Arg Val His His Arg Ser
152 50 55 60
153 Val Lys Val Ala Lys Val Glu Tyr Val Arg Lys Lys Pro Lys Leu Lys
154 65 70 75 80
155 Glu Val Gln Val Arg Leu Glu Glu His Leu Glu Cys Ala Cys Ala Thr
156 85 90 95
157 Thr Ser Leu Asn Pro Asp Tyr Arg Glu Glu Asp Thr Gly Arg Pro Arg
158 100 105 110
159 Glu Ser Gly Lys Lys Arg Lys Arg Lys Arg Leu Lys Pro Thr
160 115 120 125
163 <210> SEQ ID NO: 7
164 <211> LENGTH: 161
165 <212> TYPE: PRT
166 <213> ORGANISM: HOMO SAPIEN
168 <400> SEQUENCE: 7
169 Pro Ser Leu Gly Ser Leu Thr Ile Ala Glu Pro Ala Met Ile Ala Glu
170 1 5 10 15
171 Cys Lys Thr Arg Thr Glu Val Phe Glu Ile Ser Arg Arg Leu Ile Asp
172 20 25 30
173 Arg Thr Asn Ala Asn Phe Leu Val Trp Pro Pro Cys Val Glu Val Gln

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174          35          40          45
175 Arg Cys Ser Gly Cys Cys Asn Asn Arg Asn Val Gln Cys Arg Pro Thr
176          50          55          60
177 Gln Val Gln Leu Arg Pro Val Gln Val Arg Lys Ile Glu Ile Val Arg
178 65          70          75          80
179 Lys Lys Pro Ile Phe Lys Lys Ala Thr Val Thr Leu Glu Asp His Leu
180          85          90          95
181 Ala Cys Lys Cys Glu Thr Val Ala Ala Ala Arg Pro Val Thr Arg Ser
182          100          105          110
183 Pro Gly Gly Ser Gln Glu Gln Arg Ala Lys Thr Pro Gln Thr Arg Val
184          115          120          125
185 Thr Ile Arg Thr Val Arg Val Arg Arg Pro Pro Lys Gly Lys His Arg
186          130          135          140
187 Lys Phe Lys His Thr His Asp Lys Thr Ala Leu Lys Glu Thr Leu Gly
188 145          150          155          160
189 Ala

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193 <210> SEQ ID NO: 8

194 <211> LENGTH: 190

195 <212> TYPE: PRT

196 <213> ORGANISM: HOMO SAPIEN

198 <400> SEQUENCE: 8

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199 Pro Ala Pro Met Ala Glu Gly Gly Gly Gln Asn His His Glu Val Val
200 1          5          10          15
201 Lys Phe Met Asp Val Tyr Gln Arg Ser Tyr Cys His Pro Ile Glu Thr
202          20          25          30
203 Leu Val Asp Ile Phe Gln Glu Tyr Pro Asp Glu Ile Glu Tyr Ile Phe
204          35          40          45
205 Lys Pro Ser Cys Val Pro Leu Met Arg Cys Gly Gly Cys Cys Asn Asp
206          50          55          60
207 Glu Gly Leu Glu Cys Val Pro Thr Glu Glu Ser Asn Ile Thr Met Gln
208 65          70          75          80
209 Ile Met Arg Ile Lys Pro His Gln Gly Gln His Ile Gly Glu Met Ser
210          85          90          95
211 Phe Leu Gln His Asn Lys Cys Glu Cys Arg Pro Lys Lys Asp Arg Ala
212          100          105          110
213 Arg Gln Glu Lys Lys Ser Val Arg Gly Lys Gly Lys Gly Gln Lys Arg
214          115          120          125
215 Lys Arg Lys Lys Ser Arg Tyr Lys Ser Trp Ser Val Pro Cys Gly Pro
216          130          135          140
217 Cys Ser Glu Arg Arg Lys His Leu Phe Val Gln Asp Pro Gln Thr Cys
218 145          150          155          160
219 Lys Cys Ser Cys Lys Asn Thr Asp Ser Arg Cys Lys Ala Arg Gln Leu
220          165          170          175
221 Glu Leu Asn Glu Arg Thr Cys Arg Cys Asp Lys Pro Arg Arg
222          180          185          190

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225 <210> SEQ ID NO: 9

226 <211> LENGTH: 121

227 <212> TYPE: PRT

228 <213> ORGANISM: HOMO SAPIEN

RAW SEQUENCE LISTING

DATE: 08/07/2001

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Input Set : D:\seqlist.txt

Output Set: N:\CRF3\08072001\I813398.raw

230 <400> SEQUENCE: 9

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231 Pro Ser Ser Ser His Pro Ile Phe His Arg Gly Glu Phe Ser Val Cys
232 1 5 10 15
233 Asp Ser Val Ser Val Trp Val Gly Asp Lys Thr Thr Ala Thr Asp Ile
234 20 25 30
235 Lys Gly Lys Glu Val Met Val Leu Gly Glu Val Asn Asn Ile Asn Ser
236 35 40 45
237 Val Phe Lys Gln Tyr Phe Phe Glu Thr Lys Cys Arg Asp Pro Asn Pro
238 50 55 60
239 Val Asp Ser Gly Cys Arg Gly Ile Asp Ser Lys His Trp Asn Ser Tyr
240 65 70 75 80
241 Cys Thr Thr Thr His Thr Phe Val Lys Ala Met Leu Thr Asp Gly Lys
242 85 90 95
243 Gln Ala Ala Trp Arg Phe Ile Arg Ile Asp Thr Ala Cys Val Cys Val
244 100 105 110
245 Leu Ser Arg Lys Ala Val Arg Arg Ala
246 115 120

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249 <210> SEQ ID NO: 10

250 <211> LENGTH: 120

251 <212> TYPE: PRT

252 <213> ORGANISM: HOMO SAPIEN

254 <400> SEQUENCE: 10

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255 Pro His Ser Asp Pro Ala Arg Arg Gly Glu Leu Ser Val Cys Asp Ser
256 1 5 10 15
257 Ile Ser Glu Trp Val Thr Ala Ala Asp Lys Lys Thr Ala Val Asp Met
258 20 25 30
259 Ser Gly Gly Thr Val Thr Val Leu Glu Lys Val Ser Pro Val Lys Gly
260 35 40 45
261 Gln Leu Lys Gln Tyr Phe Tyr Glu Thr Lys Cys Asn Pro Met Gly Tyr
262 50 55 60
263 Thr Lys Glu Gly Cys Arg Gly Ile Asp Lys Arg His Trp Asn Ser Gln
264 65 70 75 80
265 Cys Arg Thr Thr Gln Ser Tyr Val Arg Ala Met Leu Thr Asp Ser Lys
266 85 90 95
267 Lys Arg Ile Gly Trp Arg Phe Ile Arg Ile Asp Thr Ser Cys Val Cys
268 100 105 110
269 Ile Leu Thr Ile Lys Arg Gly Arg
270 115 120

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273 <210> SEQ ID NO: 11

274 <211> LENGTH: 120

275 <212> TYPE: PRT

276 <213> ORGANISM: HOMO SAPIEN

278 <400> SEQUENCE: 11

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279 Pro Tyr Ala Glu His Lys Ser His Arg Gly Glu Tyr Ser Val Cys Asp
280 1 5 10 15
281 Ser Glu Ser Leu Trp Val Thr Asp Lys Ser Ser Ala Ile Asp Ile Arg
282 20 25 30
283 Gly His Gln Val Thr Val Leu Gly Glu Ile Gly Lys Thr Asn Ser Pro
284 35 40 45

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VERIFICATION SUMMARY

PATENT APPLICATION: US/09/813,398

DATE: 08/07/2001

TIME: 08:09:23

Input Set : D:\seqlist.txt

Output Set: N:\CRF3\08072001\I813398.raw

L:13 M:270 C: Current Application Number differs, Replaced Current Application No

L:13 M:271 C: Current Filing Date differs, Replaced Current Filing Date